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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/814,364	03/31/2004	Michael Kenoyer	199-0042US-C2	1283

29855 7590 07/19/2005

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EXAMINER

RAMAKRISHNAIAH, MELUR

ART UNIT	PAPER NUMBER
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2643

DATE MAILED: 07/19/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/814,364

Applicant(s)

KENOYER ET AL.

Examiner

Melur Ramakrishnaiah

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 31 March 2004.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 23-76 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 23-76 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date 12-13-04, 9-7-04, 5-24-04, 3-31-04
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____

Claim Rejections - 35 USC § 112

1. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

2. Claims 32, 34, 47, 54, 64 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the enablement requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to enable one skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention. For example claim 32 recites plurality of microphones are arranged in an n-fire configuration in the video conferencing bar. The specification does not explain what the an n-fire configuration is. Claim 34 recites two side bars having plurality of microphones and speakers, wherein the two side bars are vertical and are operable to be placed on the two sides of the video display. There is no support for this limitation in the applicant's specification. Claim 47 recites the position signal indicates an angle between the audio source and the remote videoconferencing system. Applicant's specification does not explain what it means, neither there is any support for it in the specification. Claim 54 and 64 are similar to claim 47.

Claim Rejections - 35 USC § 102

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

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(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

2. Claims 59-62, 67-68, 69-71, and 76, are rejected under 35 U.S.C 102(e) as being anticipated by Westfield (US PAT: 6,779,979, filed 6-12-2001).

Regarding claim 59, Westfield discloses a method of operating a processing unit for a local video conference system, the processing unit being coupled to a display, the method comprising: receiving at the processing unit (510, fig. 5) first and second video streams from a remote videoconferencing system, wherein first and second video streams comprises different areas derived from images of an area recorded at a video camera (410/420, fig. 4) at the remote videoconferencing system, and display on the display at least the first and second video streams (fig. 8B, col. 5, line 24 – col. 6, line 33).

Regarding claim 69, Westfield discloses a method of operating a processing unit for a local video conference system, the processing unit being coupled to a video camera, the method comprising: receiving at the video camera images of an area (fig. 4), and sending the images to the processing unit (col. 5 lines 18-23), the processing unit (510, fig. 5), generating at least first and second video streams from the images, wherein at least the second video stream comprises a subset of the area, and transmitting the first and second video streams to a remote videoconferencing system (fig. 8B, col. 5, line 24 – col. 6, line 33).

Regarding claims 60-62, 67-68, 70-71, and 76, Westfield further teaches the following: first video stream comprises the entirety of the area (fig. 4), wherein both the first and second video streams comprises subsets of the area, second sub stream comprises a subset of the area, video camera (410/420, fig. 4) is fixed (fig. 8B, col. 5, line 24 – col. 6, line 33), second video stream is displayed on the display within the first video stream (fig. 8B).

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

4. Claims 63-66, 72-74 are rejected under 35 U.S.C. 103(a) as being unpatentable over Westfield in view of Nakamura (JP10-042264).

Regarding claims 63-66, 72-74, Westfield does not teach the following: subset of the area comprises an area around an acoustic source at the remote videoconferencing system, determining the position of the acoustic source relative to the local/remote videoconferencing system, position is determined by through the interaction between the audio signal from the acoustic source and plurality of microphones at the remote videoconferencing unit, receiving at the processing unit the audio signal and the position.

However, Nakamura discloses a videoconferencing system which teaches the following: subset of the area comprises an area around an acoustic source at the remote videoconferencing system, determining the position of the acoustic source relative to the local/remote videoconferencing system, position is determined by through the interaction between the audio signal from the acoustic source and plurality of microphones (3/4, Drawing 1) at the remote videoconferencing unit, receiving at the processing unit (5, Drawing 1) the audio signal and the position (paragraphs: 0007, 0022-0028).

Thus, it would have been obvious to one of ordinary skill in the art at the time invention was made to modify Westfield's system to provide for the following: subset of the area comprises an area around an acoustic source at the remote videoconferencing system, determining the position of the acoustic source relative to the local/remote videoconferencing system, position is determined by through the interaction between the audio signal from the acoustic source and plurality of microphones at the remote videoconferencing unit, receiving at the processing unit the audio signal and the position as this arrangement would facilitate automatic tracking of the speaker in a videoconference system as taught by Nakamura (see claim 6), thus facilitating automatic camera movement to track the speaker.

5. Claim 75 is rejected under 35 U.S.C. 103(a) as being unpatentable over Westfield in view of Addeo et al. (US PAT: 5,335,011, hereinafter Addeo).

Regarding claim 75, Westfield does not teach the following: transmitting the audio signal and the position signal to the remote videoconferencing system.

However, Addeo discloses a sound localization system for teleconferencing using self-steering microphone arrays which teaches the following: transmitting the audio signal and the position signal are transmitted to the remote conferencing system (fig. 2 col. 5 lines 23-39).

Thus, it would have been obvious to one of ordinary skill in the art at the time invention was made to modify Westfield's system to provide for the following: transmitting the audio signal and the position signal are transmitted to the remote videoconferencing system as this arrangement would facilitate create more realistic sound corresponding to the video as taught by Addeo (col. 5, line 66 – col. 7, line 4), thus creating ambience in the videoconference system.

6. Claims are 23, 29, 31-33, 35-37, 38, 42, 44, are rejected under 35 U.S.C. 103(a) as being unpatentable over Nakamura in view of Addeo.

Regarding claim 23, Nakamura discloses a local videoconferencing device for videoconferencing having a local videoconferencing device with a video display and a remote videoconferencing device with a video display interconnected through the network, the local videoconferencing device comprising: a videoconferencing device bar, wherein videoconferencing bar comprises a video sensor (2, Drawings: 1, 3) for capturing images, a plurality of microphones (3/4, Drawings: 1, 3) for capturing sound, and a plurality of speakers (3/4, Drawings: 1, 3) for producing sound (paragraph: 0009, 0015, 0036), wherein video sensors, the microphones and speakers are arranged in fixed positions in the videoconferencing bar (Drawing: 3), a processing unit (1/5, Drawing 1) coupled to the videoconferencing bar, a communication interface (not

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shown) coupled to the processing unit and other remote videoconferencing devices through the network (paragraph: 0028), wherein the processing unit is operative to produce at least one of a first video stream from the signals received from the video sensor and an audio stream and audio source position signal from signals received from the microphones, wherein the processing unit is operative to receive at least one video stream, one audio stream (3, Drawings: 1, 3, paragraphs: 29-0035).

Nakamura differs from claim 23 in that he does not teach the following: receiving audio source position signal from a remote videoconferencing device, and wherein the processing unit is operative to drive plurality of speakers to reproduce sound according to the received audio stream and audio source position signal.

However, Addeo teaches the following: receiving audio source position signal from a remote videoconferencing device, and wherein the processing unit is operative to drive plurality of speakers to reproduce sound according to the received audio stream and audio source position signal (fig. 2 col. 5 lines 23-39, col. 5, line 66 – col. 7, line 4).

Thus, it would have been obvious to one of ordinary skill in the art at the time invention was made to modify Nakamura's system to provide for the following: receiving audio source position signal from a remote videoconferencing device, and wherein the processing unit is operative to drive plurality of speakers to reproduce sound according to the received audio stream and audio source position signal as this arrangement would facilitate create more realistic sound corresponding to the video as taught by Addeo, thus creating ambience in the videoconference system.

Regarding claim 38, Nakamura discloses a method for videoconferencing, wherein plurality of videoconferencing devices are connected through a network, wherein each videoconferencing device comprises a videoconferencing bar having a video sensor, a plurality of microphones and speakers, a processing unit, a video display and a network interface, the method comprising: capturing video images with the video sensor in the videoconferencing bar, capturing audio signals with microphones (3/4, Drawings: 1, 3) in the videoconferencing bar (paragraphs: 0009, 0015, Drawings: 1, 3), receiving video images and audio signals at the processing unit (1/5, Drawing 1), generating first video stream from the video images and an audio stream and an audio position signal from the audio signals, transmitting audio stream and video stream to a remote conferencing device, displaying the first video stream on a video display at the remote conferencing device (paragraphs: 0028-0036).

Nakamura differs from claim 38 in that he does not teach the following: transmitting audio position signal to a remote conferencing device, and driving the speakers at the remote conferencing device to reproduce sound according to the audio stream and the audio position signal.

However, Addedo teaches the following: transmitting audio position signal to a remote conferencing device, and driving the speakers at the remote conferencing device to reproduce sound according to the audio stream and the audio position signal (fig. 2 col. 5 lines 23-39, col. 5, line 66 – col. 7, line 4).

Thus, it would have been obvious to one of ordinary skill in the art at the time invention was made to modify Nakamura's system to provide for the following:

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transmitting audio position signal to a remote conferencing device, and driving the speakers at the remote conferencing device to reproduce sound according to the audio stream and the audio position signal as this arrangement would facilitate create more realistic sound corresponding to the video as taught by Addeo, thus creating ambience in the videoconference system.

Regarding claims 29, 32-33, 35-37, 42, Nakamura teaches the following: processing unit (1/5, Drawing 1) is operative to generate the position signal based on magnitude difference of the audio signals received from the plurality of microphones (3/4, Drawings: 1, 3, paragraphs; 0022-0023), plurality of microphones are arranged in a n-fire configuration in the videoconferencing bar, wherein videoconferencing bar is horizontal and operable to be placed on top of a video display (paragraph: 0009 Drawings: 1, 3), video sensor (2, Drawings: 1, 3, has a vide viewing angle, viewing angle is 65 degrees, further comprising a pan motor to increase the viewing angle of the video sensor (claims 6-7).

Nakamura differs from claims 31, 44 in that he does not teach the following: processing unit is operative to drive the plurality of speakers to reproduce sound according to the received audio signal and audio source position signal by selectively driving one or more speakers in response to received position signal from the videoconferencing device to play the audio signal corresponding to the image of the at least one video stream.

However, Addedo teaches the following: processing unit is operative to drive the plurality of speakers to reproduce sound according to the received audio signal and

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audio source position signal by selectively driving one or more speakers in response to received position signal from the videoconferencing device to play the audio signal corresponding to the image of the at least one video stream (fig. 2 col. 5 lines 23-39, col. 5, line 66 – col. 7, line 4).

Thus, it would have been obvious to one of ordinary skill in the art at the time invention was made to modify Nakamura's system to provide for the following: processing unit is operative to drive the plurality of speakers to reproduce sound according to the received audio signal and audio source position signal by selectively driving one or more speakers in response to received position signal from the videoconferencing device to play the audio signal corresponding to the image of the at least one video stream as this arrangement would facilitate create more realistic sound corresponding to the video as taught by Addeo, thus creating ambience in the videoconference system.

7. Claims 24-28, 39-41, are rejected under 35 U.S.C. 103(a) as being unpatentable over Nakamura in view of Addeo as applied to claims 23 and 38 above, and further in view of Westfield.

Regarding claims 24-27, 39-41, the combination does not teach the following: video sensor is operative to produce high resolution video stream, wherein first video stream is of a first resolution, wherein processing unit is operative to produce a second video stream, and wherein second video stream is of a second resolution and is representing an area in the first video stream, wherein the first resolution of first video stream is 700x400 pixels, and wherein second resolution of the second video stream is

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300x200 pixels, wherein the maximum resolution of the video sensor is 3000x2000 pixels, wherein the second video stream represents the images of a speaking videoconference participant.

However, Westfield teaches the following: video sensor is operative to produce high resolution video stream, wherein first video stream is of a first resolution, wherein processing unit is operative a second video stream, and wherein second video stream is of a second resolution and is representing an area in the first video stream, wherein the first resolution first video stream is 2048x1526 pixels, and wherein second resolution of the second video stream is 640x480 pixels, wherein the maximum resolution of the video sensor is 2048x1526 pixels (col. 4 lines 52-59), wherein the second video stream represents the images of a speaking videoconference participant (col. 5, line 24 – col. 6, line 33).

Thus, it would have been obvious to one of ordinary skill in the art at the time invention was made to modify the combination to provide for the following: the combination does not teach the following: video sensor is operative to produce high resolution video stream, wherein first video stream is of a first resolution, wherein processing unit is operative to produce a second video stream, and wherein second video stream is of a second resolution and is representing an area in the first video stream, wherein the first resolution of first video stream is 700x400 pixels, and wherein second resolution of the second video stream is 300x200 pixels, wherein the maximum resolution of the video sensor is 3000x2000 pixels, wherein the second video stream represents the images of a speaking videoconference participant as this arrangement

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would provide necessary processing to meet the application requirements for intended use as shown by Westfiled.

Regarding claim 28, the combination teaches the following: second video stream follows the speaking videoconference participant and changes when the speaking videoconference participant changes (paragraphs: 0028 – 0035 of Nakamura)

8. Claim 34 is rejected under 35 U.S.C. 103(a) as being unpatentable over Nakamura in view of Addeo as applied to claim 33 above, and further in view of Wallace, Jr. (US PAT: 4,311,874, hereinafter Wallace).

The combination differs from claim 34 in that although it teaches having a horizontal side bar having plurality of microphones and speakers Drawings. 1, 3, of Nakamura); it does not teach the following: two side bars having plurality of microphones and speakers, where the two side bars are vertical and are operable to be placed on two sides of the display.

However, Wallace discloses teleconference microphone arrays which teaches disposition of plurality of microphones in a vertical plane (fig. 3, col. 3 lines 32-44).

Thus, it would have been obvious to one of ordinary skill in the art at the time invention was made to modify the combination to provide for the following: two side bars having plurality of microphones and speakers, where the two side bars are vertical and are operable to be placed on two sides of the display as this arrangement would provide one of the ways, among many possible ways, of arranging audio sensors to meet the application needs of a conference as taught by Wallace.

9. Claims 30 and 43 are rejected under 35 U.S.C. 103(a) as being unpatentable over Nakamura in view of Addeo as applied to claims 23 and 38 above, and further in view of Simms, Jr. (US PAT: 3,618,035, hereinafter Simms).

Regarding claims 30 and 43, the combination does not teach the following: processing unit is operative to synchronize the phases of the signals from the video sensor and a video stream output by a remote videoconference device for display on a remote video display.

However, Simms teaches the following: a method of synchronizing the phase of the video signals transmitted to video display apparatus (claim 11).

Thus, it would have been obvious to one of ordinary skill in the art at the time invention was made to modify the combination to provide for the following: processing unit is operative to synchronize the phases of the signals from the video sensor and a video stream output by a remote videoconference device for display on a remote video display as this arrangement would facilitate displaying received signals properly.

10. Claims 45-51 and 52-57 are rejected under 35 U.S.C. 102(b) as being anticipated by Addeo

Regarding claim 45, Addeo discloses a method of operating a processing unit for local videoconference system, the processing unit controlling plurality of speakers, the method comprising: receiving at the processing unit (140, fig. 2) from a remote videoconferencing system a position signal and an audio signal from an audio source, wherein the position signal is indicative of a position of the audio source relative to the remote videoconferencing system, and selectively driving at least one of the plurality of

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speakers (130, fig. 2) in accordance with the position signal to broadcast audio signal, wherein the driven speakers are indicative of the position of the audio source relative to the remote videoconferencing system (fig. 2, col. 4, line 23 – col. 6, line 1).

Regarding claim 52, Addeo discloses a method of operating a processing unit for local videoconference system, the processing unit receiving input from a plurality of microphones, the method comprising: receiving an audio signal from an audio source at the plurality of microphones (150, fig. 2), each microphone generating a microphone signal, generating a position signal from the microphone signals indicative of a position of the audio source relative to the local videoconferencing system, and transmitting the audio signal and the position signal to a remote videoconferencing unit (A, fig. 2, line 23 – col. 6, line 1).

Regarding claims 46-51, 53-57, Addeo further teaches the following: audio source comprises a videoconference participant (for example 201, fig. 2), the position signal indicates an angle between the audio source and the remote videoconferencing system (implicit, as the reference teaches control device 140 that regenerates the audio signal received from the station B in a manner such that the sound is perceived as emanating from the virtual point 121, col. 5, line 66 – col. 6, line 1), only one speaker (130, fig. 2) is driven, speakers are positioned in a linear array (fig. 2), position signal is derived at the remote videoconferencing system from the microphone signals generated by plurality of microphones (150, fig. 2), generating position signal comprises assessing the magnitude of the microphone signals (reads on determining volume zone of the audio sound, col. 5 lines 34-36), microphones are positioned in a linear array (150, fig.

2), position signal is used to at the videoconferencing system to selectively drive at least one of the plurality of speakers (130, fig. 2) in accordance with the position signal to broadcast the audio signal, wherein the driven speakers are indicative of the audio source relative to the remote videoconferencing system (col. 5 lines 36-39, lines 52-68, col. 6 line 1).

11. Claim 58 is rejected under 35 U.S.C. 103(a) as being unpatentable over Addeo in view of Nakamura.

Regarding claim 58, Addeo does not explicitly teach the following: microphones and speakers are both positioned in a linear array.

However, Nakamura teaches the following: microphones and speakers are both positioned in a linear array (paragraph: 0009, and Drawings: 1, 3).

Thus, it would have been obvious to one of ordinary skill in the art at the time invention was made to modify Addeo to provide for the following: microphones and speakers are both positioned in a linear array as this arrangement would provide compact means for arranging the audio sensors as shown by Nakamura.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Melur Ramakrishnaiah whose telephone number is (571)272-8098. The examiner can normally be reached on 9 Hr schedule.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Curt Kuntz can be reached on (571) 272-7499. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).


Melur Ramakrishnaiah
Primary Examiner
Art Unit 2643